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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,030	10/01/2004	Huai Lin	0299568-0419-PCT-US	4641

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EXAMINER	
RO, BENTSU	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/510,030	LIN, HUAI	
	Examiner	Art Unit	
	Bentsu Ro	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *14-16* is/are allowed.

6)☒ Claim(s) *1,2,4/1,4/2,5,6,7,13* is/are rejected.

7)☒ Claim(s) *3,4/3,8-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/1/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

FIRST OFFICE ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4/1 (claim 4 depend on claim 1), 4/2, 5, 6, 7, 13 are all rejected under 35 U.S.C. 102(b) as being clearly anticipated by Naidu et al US Patent No. 5,144,564.

Claims read onto Naidu et al teaching as follows:

The claims:	Naidu et al teaching:
1. (Original) A system for controlling a permanent magnet motor comprising:	Fig. 7 shows a system for controlling a permanent magnet motor; column 1, line 10 states "Permanent Magnet Synchronous machines", which is a PM motor;
a motor controller,	Fig. 7 shows a microprocessor 22, which is a motor controller;
said motor controller using phase currents of the permanent magnet electric motor to generate voltage-controlling signals	Fig. 7 shows current sensors 28 and 30 for sensing two motor phase currents, and a calculation circuit 31 for calculating the third motor phase current based on the currents from the two phase currents; the microprocessor 22 generates sinusoidal signals SINθe and COSθe; the SINθe and COSθe are voltage-controlling signals;

in relation to both changes in speed ω and torque T of the permanent magnet electric motor; and a power stage, said power stage receiving the voltage-controlling signals from the motor controller and feeding them back to the permanent magnet electric motor.	it is noted that the θe is a rotor position signal, the rotor position signal θe relates to the motor speed and motor torque, namely, θe is a function of motor speed and torque, and vice versa; Fig. 7 shows a vector rotator 54, a 2ϕ-3ϕ converter 53, a hysteresis band controller 58, and an inverter 60; the vector rotator 54, the converter 53, the band controller 58 and the inverter 60 together constitute a power stage; the vector rotator 54 receives the SINθe and COSθe signals and combines these signals with high frequency current reference signals to control the motor phase current via inverter 60; this type of control is a feed-back type of control as claimed; see column 6, line 56-67.
2. (Original) The system for controlling a permanent magnet electric motor according to claim 1, wherein said permanent magnet electric motor is a three-phase permanent magnet electric motor provided with a rotor and a stator, each one of the phases thereof carrying a current, ia, ib and ic respectively.	column 2, lines 19-20 states "a typical permanent magnet synchronous machine", which is a three-phase permanent magnet electric motor; this type of motor has a rotor and a stator, the stator windings are shown in Fig. 6, however, the rotor is not shown; column 3, line 9 states "three phase current signals".
4. (Original) The system for controlling a permanent magnet electric motor according to any one of claims 1 to 2, said system continuously responding to changes of speed and torque of the permanent magnet electric motor as well	as explained previously with respect to claim 1, the rotor position signal θe is a function of motor speed and torque, because the motor speed is a differentiation of rotor position signal,

as to changes in ambient conditions.	namely $\omega = d\theta e/dt$; the motor current relates to motor torque and motor speed; the motor current is also a function of motor temperature; thus, the motor current is a function of motor speed, motor torque, and motor temperature; namely $i = f(\omega, t, T)$; in view of the foregoing, the rotor position signal, the motor current, the motor speed, the motor torque, and the motor temperature are all related to each other, and any one signal changed will affect the other signals to change; it is noted that the motor temperature depends on ambient condition; thus, when rotor position signal changes continuously, the SINθe and COSθe signals changed, and all other parameters also changed continuously.
5.	a method claim similar to that of claim 1.
6.	Fig. 7 shows current sensors 28 and 30 for sensing two motor phase currents, and a calculation circuit 31 for calculating the third motor phase current based on the currents from the two phase currents.
7. (Currently amended) The method for controlling a permanent magnet electric motor according to claim 5, further comprising computing a current torque T of the permanent magnet electric motor.	based on the examiner's best understanding, the Fig. 7 circuit includes a HBCC controller 58, this controller controls motor current because there are current inputs ia, ib, ic inputted to the controller 58; the current input signals related to motor torque T.
13. (Currently amended) The method for	

controlling a permanent magnet electric motor according to claim 5, wherein constants are set based on a number of parameters selected in the group comprising a sampling rate of a computer to be used, conditions of power drive, sensitivity of current sensors for current measurements and characteristics of the permanent magnet electric motor.	the current input ia, ib, ic are constants related to conditions of power drive; the high frequency current reference signals Iq^e and Id^e are constant of the characteristics of the permanent magnet electric motor; it is noted that claim 13 is claiming "selected in the group comprising", therefore, if one constant is selected, the claimed limitation is met.

3. Claims 3, 4/3 and 8-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 14-16 are allowable.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 571 272-2072.

9/27/2005

Bentsu Ro
Senior Examiner
Art Unit 2837

Bentsu Ro